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TRANSMITTAL OF APPEAL BRIEF

Docket No.
DWH-11902/29

In re Application of: Dawn White et al.

Application No.
10/646,599-Conf. #9796

Filing Date
August 21, 2003

Examiner
J. D. Sells

Group Art Unit
1734

Invention: METHODS AND MATERIALS TO INHIBIT OBJECT CONSOLIDATION IN LOCALIZED AREAS

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: June 12, 2006.

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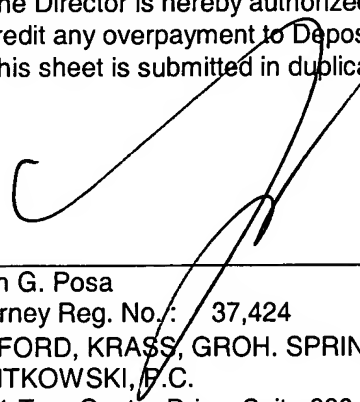
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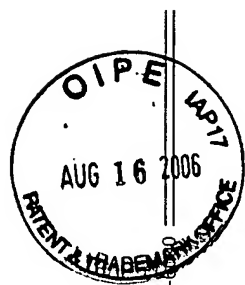
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of: White

Serial No.: 10/646,599

Group Art Unit: 1734

Filed: August 21, 2003

Examiner: J. Sells

For: METHODS AND MATERIALS TO INHIBIT OBJECT CONSOLIDATION IN
LOCALIZED AREAS

APPELLANT'S BRIEF UNDER 37 CFR §1.192

Mail Stop Appeal Brief
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PO Box 1450
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Dear Sir:

I. Real Party in Interest

The real party and interest in this case is Solidica, Inc., by assignment.

II. Related Appeals and Interferences

There are no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

The present application was filed with 18 claims. Claims 1-18 are pending, rejected and under appeal. Claims 1 and 10 are the independent claims.

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**IV. Status of Amendments Filed Subsequent
Final Rejection**

No after-final amendments have been filed.

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V. Summary of Claimed Subject Matter

Independent claim 1 is directed to an additive manufacturing process of the type wherein an object is fabricated by consolidating material increments from a feedstock in accordance with a description of the object, a method of preventing the build-up of material in a localized area comprising the step of providing a feedstock in the form of sheet, tape, or wire material increments; bonding the material increments to an object being fabricated; and treating the object being fabricated, the feedstock, or both, so as to inhibit the consolidation of material increments in one or more localized areas. (Specification, page 3, lines 9-23; 4, page 4, lines 22 to page 6, line 12).

Independent claim 10 is directed to an additive manufacturing process of the type wherein an object is fabricated by consolidating material increments from a feedstock in accordance with a description of the object, a method of preventing the build-up of material in a particular area comprising the steps of analyzing the description of the object to determine if an intrinsic support would be necessary or desirable to the fabrication thereof; determining whether localized, inhibited consolidation would be appropriate to the formation of the intrinsic support and, if so treating the object being fabricated, the feedstock, or both, so as to inhibit the consolidation of material increments in accordance with the description of the object. (Specification, page 3, lines 9-23; 4, page 4, lines 22 to page 6, line 12).

VI. Grounds of Objection/Rejection To Be Reviewed On Appeal

A. The rejection of claims 1-18 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis.

VII. Argument

Claim 1.

Claim 1 includes, among other limitations, the step of "treating the object being fabricated, the feedstock, or both, so as to inhibit the consolidation of material increments in one or more localized areas." Claim 1 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. The Examiner concedes that Dourmanidis et al. fail to disclose "the consolidation inhibitor as claimed by Appellant," but argues that

“[i]t would have been obvious ... to employ a consolidation inhibitor, as taught by Khoshnevis, “in order to facilitate manufacture of articles with desired shapes and configurations.” This “reason” does not justify the combination. Both Dourmanidis et al. and Khoshnevis are *already capable* of manufacturing of articles with desired shapes and configurations, albeit using entirely different processes.

The invention of Dourmanidis et al. “relates to a method and apparatus for producing a three-dimensional part from a plurality of planar layers. A sheet of planar material is placed on the partial part and ultrasonically welded, with the first sheet placed on a base. The sheet is cut to the shape of the partial part. The process of placing of the sheet materials on the partial, welding, and cutting of the two-dimensional contour layer is continued until part is complete. (Dourmanidis et al., 2:39-46)

“The invention relates to a method and an apparatus to prototype cost effective parts with advanced and customized properties. These prototypes include full dense, full-strength metal and plastic functional parts; multiple-metal, multiple-plastic, and metal-plastic sandwich parts with internal pattern structures; composite materials with fiber reinforcements; active materials with embedded mechanical, thermal and optical fiber actuators; intelligent materials with encapsulated miniature sensors, electronics, processing and control elements; and with micro-hydraulic channels, fluidic networks, micro-mechanisms and mechatronics internal arrangements.” (Dourmanidis et al., 2:66-3:10)

The method of Khoshnevis “includes providing a layer of powder material, and selectively depositing bonding inhibitor on selected areas of the layer of powder material. The areas to be deposited with the bonding inhibitor are selected according to a cross-section design of the 3-D object. The method also includes promoting bonding of uninhibited areas of the entire layer of powder material by either sintering or bulk deposition of chemical binders. The method further includes repeating the steps of providing a layer of powder material, selectively depositing bonding inhibitor, and promoting bonding until the 3-D object is formed.” (Khoshnevis, Abstract)

Neither Dourmanidis et al. nor Khoshnevis hint or suggest that their respective methods fail to facilitate the manufacture of articles with desired shapes and configurations. Indeed, both references boast about their abilities to make 3-D parts with arbitrary shapes and sizes. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430

(Fed. Cir. 1990). Rather, a *prima facie* case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. See In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is *prima facie* obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Rejections based on §103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 177 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968). The Examiner's argument that the proposed combination of Dourmanidis et al. and Khoshnevis would allow for the manufacture "of articles with desired shapes and configurations" is insufficient to establish *prima facie* obviousness.

Claim 2.

Claim 2 adds to claim 1 the limitation of the treatment affecting the surface chemistry of the feedstock to prevent local bonding. Claim 2 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. "[I]t is the examiner's position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured." This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, “the [E]xaminer can satisfy the burden of showing obviousness of the combination ‘only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.’” In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). “Broad conclusory statements regarding the teaching of multiple references, standing alone, are not ‘evidence.’” In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). “Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact.” Dembiczak, 175 F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 3.

Claim 3 adds to claim 1 the limitation of the treatment being applied to a previously built surface of the object. Claim 3 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. “[I]t is the examiner’s position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured.” This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been “ ‘well within the ordinary skill of the art’ at the time the claimed invention was made” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

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statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). "Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact." Dembiczak, 175 F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 4.

Claim 4 adds to claim 1 the limitation of the treatment including the introduction of an oxidizer. Claim 4 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. "[I]t is the examiner's position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured." This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.'" In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). "Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact." Dembiczak, 175 F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 5.

Claim 5 adds to claim 1 the limitation of the oxidizer being a metal nitrate, chlorate, chromate, peroxide, or manganate. Claim 5 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. “[I]t is the examiner’s position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured.” This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been “ ‘well within the ordinary skill of the art at the time the claimed invention was made’ ” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

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Claim 6.

Claim 6 adds to claim 1 the limitation of the treatment including the introduction of a base or alkali. Claim 6 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. “[I]t is the examiner’s position [that the

added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured.” This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

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Claim 7.

Claim 7 adds to claim 1 the limitation of the treatment including a thin coating of a lubricious material such as tin to prevent the breakup of an oxide layer. Claim 7 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. “[I]t is the examiner’s position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured.” This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the

ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

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Claim 8.

Claim 8 adds to claim 1 the limitation of the treatment forming a coating having a thickness in the range of angstroms to microns to prevent accumulation of Z-axis errors. Claim 8 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. "[I]t is the examiner's position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured." This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

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Claim 9.

Claim 9 adds to claim 1 the limitation of the consolidation being in the form of ultrasonic consolidation. Claim 9 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. "[I]t is the examiner's position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured." This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.'" In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). "Broad conclusory

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Claim 10.

In an additive manufacturing process of the type wherein an object is fabricated by consolidating material increments from a feedstock in accordance with a description of the object, claim 10 is directed to a method of preventing the build-up of material in a particular area. The method includes the step of analyzing the description of the object to determine if an intrinsic support would be necessary or desirable to the fabrication thereof. The method further includes the step of determining whether localized, inhibited consolidation would be appropriate to the formation of the intrinsic support and, if so, treating the object being fabricated, the feedstock, or both, so as to inhibit the consolidation of material increments in accordance with the description of the object. Claim 10 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. "[I]t is the examiner's position [that the limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured." This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.'" In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002),

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Moreover, even if the Dourmanidis/Khoshnevis combination were legitimate, Appellant's invention would not result since neither reference teach the steps of step of analyzing the description of the object to determine if an intrinsic support would be necessary or desirable to the fabrication thereof; determining whether localized, inhibited consolidation would be appropriate to the formation of the intrinsic support; or treating the object being fabricated, the feedstock, or both, so as to inhibit the consolidation of material increments in accordance with the description of the object.

Claim 11.

Claim 11 adds to claim 10 the limitation of the treatment affecting the surface chemistry of the feedstock to prevent local bonding. Claim 11 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. "[I]t is the examiner's position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured." This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant

teachings of the references.” In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). “Broad conclusory statements regarding the teaching of multiple references, standing alone, are not ‘evidence.’” In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). “Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact.” Dembiczak, 175 F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 12.

Claim 12 adds to claim 10 the limitation of the treatment being applied to a previously built surface of the object. Claim 12 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. “[I]t is the examiner’s position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured.” This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been “ ‘well within the ordinary skill of the art at the time the claimed invention was made’ ” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

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F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 13.

Claim 13 adds to claim 10 the limitation of the treatment including the introduction of an oxidizer. Claim 13 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. "[I]t is the examiner's position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured." This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.'" In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). "Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact." Dembiczak, 175 F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 14.

Claim 14 adds to claim 10 the limitation of the oxidizer being a metal nitrate, chlorate,

chromate, peroxide, or manganate. Claim 14 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. “[I]t is the examiner’s position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured.” This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been “ ‘well within the ordinary skill of the art at the time the claimed invention was made’ ” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, “the [E]xaminer can satisfy the burden of showing obviousness of the combination ‘only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.’” In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). “Broad conclusory statements regarding the teaching of multiple references, standing alone, are not ‘evidence.’” In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). “Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact.” Dembiczak, 175 F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 15.

Claim 15 adds to claim 10 the limitation of the treatment including the introduction of a base or alkali. Claim 15 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. “[I]t is the examiner’s position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured.” This argument

does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.'" In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). "Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact." Dembiczak, 175 F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 16.

Claim 16 adds to claim 10 the limitation of the treatment including a thin coating of a lubricious material such as tin to prevent the breakup of an oxide layer. Claim 16 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. "[I]t is the examiner's position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured." This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of

the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.'" In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). "Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact." Dembiczak, 175 F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 17.

Claim 17 adds to claim 10 the limitation of the treatment forming a coating having a thickness in the range of angstroms to microns to prevent accumulation of Z-axis errors. Claim 17 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. "[I]t is the examiner's position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured." This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been " 'well within the ordinary skill of the art at the time the claimed invention was made' " because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant

teachings of the references.” In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). “Broad conclusory statements regarding the teaching of multiple references, standing alone, are not ‘evidence.’” In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). “Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact.” Dembiczak, 175 F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Claim 18.

Claim 18 adds to claim 10 the limitation of the consolidation being in the form of ultrasonic consolidation. Claim 18 stands rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,450,393 to Dourmanidis et al. in view of U.S. Patent No. 6,589,471 to Khoshnevis. “[I]t is the examiner’s position [that the added limitation(s)] are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method and apparatus of Khoshnevis as a matter of design choice based on the physical requirements and properties of the articles being manufactured.” This argument does not establish *prima facie* obviousness. A statement that modifications of the prior art to meet the claimed invention would have been “ ‘well within the ordinary skill of the art at the time the claimed invention was made’ ” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

When determining obviousness, “the [E]xaminer can satisfy the burden of showing obviousness of the combination ‘only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.’” In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). “Broad conclusory statements regarding the teaching of multiple references, standing alone, are not ‘evidence.’” In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). “Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact.” Dembiczak, 175

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F.3d at 999-1000, 50 USPQ2d at 1617, citing McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Conclusion

In conclusion, for the arguments of record and the reasons set forth above, all pending claims of the subject application continue to be in condition for allowance and Appellant seeks the Board's concurrence at this time.

Respectfully submitted,

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APPENDIX A

CLAIMS ON APPEAL

1. In an additive manufacturing process of the type wherein an object is fabricated by consolidating material increments from a feedstock in accordance with a description of the object, a method of preventing the build-up of material in a localized area comprising the step of:
providing a feedstock in the form of sheet, tape, or wire material increments;
bonding the material increments to an object being fabricated; and
treating the object being fabricated, the feedstock, or both, so as to inhibit the consolidation of material increments in one or more localized areas.
2. The method of claim 1, wherein the treatment affects the surface chemistry of the feedstock to prevent local bonding.
3. The method of claim 1, wherein the treatment is applied to a previously built surface of the object.
4. The method of claim 1, wherein the treatment includes the introduction of an oxidizer.
5. The method of claim 1, wherein the oxidizer is a metal nitrate, chlorate, chromate, peroxide, or manganate.
6. The method of claim 1, wherein the treatment includes the introduction of a base or alkali.
7. The method of claim 1, wherein the treatment includes a thin coating of a lubricious material such as tin to prevent the breakup of an oxide layer.
8. The method of claim 1, wherein the treatment forms a coating having a thickness in the

range of angstroms to microns to prevent accumulation of Z-axis errors.

9. The method of claim 1, wherein the consolidation is in the form of ultrasonic consolidation.

10. In an additive manufacturing process of the type wherein an object is fabricated by consolidating material increments from a feedstock in accordance with a description of the object, a method of preventing the build-up of material in a particular area comprising the steps of:

analyzing the description of the object to determine if an intrinsic support would be necessary or desirable to the fabrication thereof;

determining whether localized, inhibited consolidation would be appropriate to the formation of the intrinsic support and, if so:

treating the object being fabricated, the feedstock, or both, so as to inhibit the consolidation of material increments in accordance with the description of the object.

11. The method of claim 10, wherein the treatment affects the surface chemistry of the feedstock to prevent local bonding.

12. The method of claim 10, wherein the treatment is applied to a previously built surface of the object.

13. The method of claim 10, wherein the treatment includes the introduction of an oxidizer.

14. The method of claim 10, wherein the oxidizer is a metal nitrate, chlorate, chromate, peroxide, or manganate.

15. The method of claim 10, wherein the treatment includes the introduction of a base or alkali.

16. The method of claim 10, wherein the treatment includes a thin coating of a lubricious material such as tin to prevent the breakup of an oxide layer.

17. The method of claim 10, wherein the treatment forms a coating having a thickness in the range of angstroms to microns to prevent accumulation of Z-axis errors.

18. The method of claim 10, wherein the consolidation is in the form of ultrasonic consolidation.

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None.

APPENDIX B

EVIDENCE

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APPENDIX C
RELATED PROCEEDINGS

None.